

Amendments to the Claims

Kindly amend claims 1, 15, 26, 40, 51, 52, 53, 65 & 67 as set forth below, and cancel claims 2, 14, 23, 27, 39, 48, 54, 64, 75 & 78 without prejudice. All claims are reproduced below, with changes in the amended claims shown by underlining (for added matter) and strikethrough/double brackets (for deleted matter).

1. (Currently Amended) A method for re-mapping packet identifier (PID) values provided in transport packets associated with multiple transport streams to be multiplexed onto a single shared transport channel, said method comprising:

providing at least one PID re-map table having re-map values indexed by n possible PID values of transport packets associated with at least one transport stream of the multiple transport streams, wherein n is less than all possible PID values of transport packets within said multiple transport streams; [[and]]

comparing PID values of transport packets associated with said at least one transport stream with said n possible PID values of said at least one PID re-map table, and when a match is found, indexing said at least one PID re-map table using said matching PID value, generating therefrom a re-map value, and replacing said matching PID value by said re-map value; and

wherein when a non-matching PID value is found, performing at least one of: replacing said non-matching PID value with a null value, meaning that the associated transport packet is to be discarded; or performing clock recovery on the at least one transport stream and discarding the transport packet associated with said non-matching PID value.

2. (Canceled).

3. (Original) The method of claim 1, wherein said single shared transport channel couples to a transport demultiplexor, and wherein said transport demultiplexor can handle x PID values, and $n \leq x$.

4. (Original) The method of claim 3, wherein said n possible PID values equals 32 possible PID values.

5. (Original) The method of claim 1, further comprising receiving said multiple transport streams from multiple network interfaces, each network interface being coupled to receive a separate network input.

6. (Original) The method of claim 5, further comprising interleaving said multiple transport streams on a packet basis for output onto said single shared transport channel.

7. (Original) The method of claim 6, further comprising buffering selected transport packets of said multiple transport streams prior to interleaving thereof to ensure each packet is complete before interleaving.

8. (Original) The method of claim 1, wherein said multiple transport streams comprise two transport streams, and wherein said method comprises providing a separate PID re-map table for each of said two transport streams, and comparing PID values of transport packets associated with each of said two transport streams with entries of said respective PID re-map tables.

9. (Original) The method of claim 8, further comprising receiving said two transport streams for re-mapping, wherein each transport stream contains a real time clock reference.

10. (Original) The method of claim 1, wherein said multiple transport streams include navigation tables indicative of the PID values in use by the respective transport streams, and wherein said method further comprises monitoring said navigation tables and adjusting said n possible PID values of transport packets responsive to changes in said navigation tables.

11. (Original) The method of claim 1, further comprising receiving said multiple transport streams and synchronizing each stream to identify packet boundaries.

12. (Original) The method of claim 11, wherein said receiving comprises receiving at least one transport stream of the multiple transport streams through a network interface, said at least one transport stream comprising a live network input.

13. (Original) The method of claim 12, wherein at least one transport stream of said multiple transport streams comprises a transport stream retrieved from a storage device associated with a transport demultiplexor coupled to receive said interleaved transport packets.

14. (Canceled).

15. (Currently Amended) A method for processing transport packets associated with multiple transport streams, said method comprising:

re-mapping packet identifier (PID) values provided in transport packets associated with at least one transport stream of the multiple transport streams, said re-mapping comprising:

providing at least one PID re-map table having re-map values indexed by n possible PID values of transport packets associated with at least one transport stream of the multiple transport streams, wherein n is less than all possible PID values of transport packets within said multiple transport streams;

comparing PID values of transport packets associated with said at least one transport stream with said n possible PID values of said at least one PID re-map table, and when a match is found, indexing said at least one PID re-map table using said matching PID value, generating therefrom a re-map value, and replacing said matching PID value by said re-map value[[.]];

wherein when a non-matching PID value is found, performing at least one of: replacing said non-matching PID value with a null value, meaning that the associated transport packet is to be discarded; or performing clock recovery on the at least one transport stream and discarding the transport packet associated with said non-matching PID value;

interleaving selected transport packets of said multiple transport streams;

forwarding said interleaved transport packets of said multiple transport streams to a single transport demultiplexor; and

demultiplexing said interleaved transport packets of said multiple transport streams employing said single transport demultiplexor.

16. (Original) The method of claim 15, wherein said interleaving comprises interleaving said multiple transport streams on a packet basis for output to said single transport demultiplexor.

17. (Original) The method of claim 16, further comprising buffering said selected transport packets prior to interleaving thereof to ensure each packet is complete before interleaving.

18. (Original) The method of claim 15, further comprising receiving said multiple transport streams and synchronizing each stream to identify packet boundaries.

19. (Original) The method of claim 18, wherein said receiving comprises receiving said multiple transport streams for multiple network interfaces, each network interface being coupled to receive a separate live network input.

20. (Original) The method of claim 18, wherein said receiving comprises receiving at least one transport stream of multiple transport streams through a network interface, said at least one transport stream comprising a live network input.

21. (Original) The method of claim 20, wherein at least one transport stream of said multiple transport streams comprises a transport stream retrieved from a storage device associated with said single transport demultiplexor.

22. (Original) The method of claim 15, wherein said method is implemented within a set-top-box system.

23. (Canceled).

24. (Original) The method of claim 15, wherein said transport demultiplexor can handle x PID values, and $n \leq x$.

25. (Original) The method of claim 15, wherein said multiple transport streams include navigation tables indicative of the PID values in use by the respective transport streams, and wherein said method further comprises monitoring said navigation tables and adjusting said n possible PID values of transport packets responsive to changes in said navigation tables.

26. (Currently Amended) A system of re-mapping packet identifier (PID) values provided in transport packets associated with multiple transport streams to be multiplexed onto a single shared transport channel, said system comprising:

means for providing at least one PID re-map table having re-map values indexed by n possible PID values of transport packets associated with at least one transport stream of the multiple transport streams, wherein n is less than all possible PID values of transport packets within said multiple transport streams;
[[and]]

means for comparing PID values of transport packets associated with said at least one transport stream with said n possible PID values of said at least one PID re-map table, and when a match is found, for indexing said at least one PID re-map table using said matching PID value, generating therefrom a re-map value, and replacing said matching PID value by said re-map value; and

wherein when a non-matching PID value is found, performing at least one of: means for replacing said non-matching PID value with a null value, meaning that the associated transport packet is to be discarded; or means for performing clock recovery on the at least one transport stream and discarding the transport packet associated with said non-matching PID value.

27. (Canceled).

28. (Original) The system of claim 26, wherein said single shared transport channel couples to a transport demultiplexor, and wherein said transport demultiplexor can handle x PID values, and $n \leq x$.

29. (Original) The system of claim 28, wherein said n possible PID values equals 32 possible PID values.

30. (Original) The system of claim 26, further comprising means for receiving said multiple transport streams from multiple network interfaces, each network interface being coupled to receive a separate network input.

31. (Original) The system of claim 30, further comprising means for interleaving said multiple transport streams on a packet basis for output onto said single shared transport channel.

32. (Original) The system of claim 31, further comprising means for buffering selected transport packets of said multiple transport streams prior to interleaving thereof to ensure each packet is complete before interleaving.

33. (Original) The system of claim 26, wherein said multiple transport streams comprise two transport streams, and wherein said system comprises means for providing a separate PID re-map table for each of said two transport streams, and for comparing PID values of transport packets associated with each of said two transport streams with entries of said respective PID re-map tables.

34. (Original) The system of claim 33, further comprising means for receiving said two transport streams for re-mapping, wherein each transport stream contains a real time clock reference.

35. (Original) The system of claim 26, wherein said multiple transport streams include navigation tables indicative of the PID values in use by the respective transport streams, and wherein said system further comprises means for monitoring said navigation tables and adjusting said n possible PID values of transport packets responsive to changes in said navigation tables.

36. (Original) The system of claim 26, further comprising means for receiving said multiple transport streams and for synchronizing each stream to identify packet boundaries.

37. (Original) The system of claim 36, wherein said means for receiving comprises means for receiving at least one transport stream of the multiple transport streams through a network interface, said at least one transport stream comprising a live network input.

38. (Original) The system of claim 37, wherein at least one transport stream of said multiple transport streams comprises a transport stream retrieved from a storage device associated with a transport demultiplexor coupled to receive said interleaved transport packets.

39. (Canceled).

40. (Currently Amended) A system for processing transport packets associated with multiple transport streams, said system comprising:

means for re-mapping packet identifier (PID) values provided in transport packets associated with at least one transport stream of the multiple transport streams, said means for re-mapping comprising:

means for providing at least one PID re-map table having re-map values indexed by n possible PID values of transport packets associated with at least one transport stream of the multiple transport streams, wherein n is less than all possible PID values of transport packets within said multiple transport streams;

means for comparing PID values of transport packets associated with said at least one transport stream with said n possible PID values of said at least one PID re-map table, and when a match is found, for indexing said at least one PID re-map table using said matching PID value, generating therefrom a re-map value, and replacing said matching PID value by said re-map value;

wherein when a non-matching PID value is found, performing at least one of: means for replacing said non-matching PID value with a null value, meaning that the associated transport packet is to be discarded; or means for performing clock recovery on the at least one transport stream and discarding the transport packet associated with said non-matching PID value;

means for interleaving selected transport packets of said multiple transport streams;

means for forwarding said interleaved transport packets of said multiple transport streams to a single transport demultiplexor; and

wherein said transport demultiplexor comprises means for demultiplexing said interleaved transport packets of said multiple transport streams.

41. (Original) The system of claim 40, wherein said means for interleaving comprises means for interleaving said multiple transport streams on a packet basis for output to said single transport demultiplexor.

42. (Original) The system of claim 41, further comprising means for buffering said selected transport packets prior to interleaving thereof to ensure each packet is complete before interleaving.

43. (Original) The system of claim 40, further comprising means for receiving said multiple transport streams and synchronizing each stream to identify packet boundaries.

44. (Original) The system of claim 43, wherein said means for receiving comprises means for receiving said multiple transport streams for multiple network interfaces, each network interface being coupled to receive a separate live network input.

45. (Original) The system of claim 43, wherein said means for receiving comprises means for receiving at least one transport stream of multiple transport streams through a network interface, said at least one transport stream comprising a live network input.

46. (Original) The system of claim 45, wherein at least one transport stream of said multiple transport streams comprises a transport stream retrieved from a storage device associated with said single transport demultiplexor.

47. (Original) The system of claim 40, wherein said system is implemented within a set-top-box system.

48. (Canceled).

49. (Currently Amended) The system of claim 40, A system for processing transport packets associated with multiple transport streams, said system comprising:

means for re-mapping packet identifier (PID) values provided in transport packets associated with at least one transport stream of the multiple transport streams, said means for re-mapping comprising:

means for providing at least one PID re-map table having re-map values indexed by n possible PID values of transport packets associated with at least one transport stream of the multiple transport streams, wherein n is less than all possible PID values of transport packets within said multiple transport streams;

means for comparing PID values of transport packets associated with said at least one transport stream with said n possible PID values of said at least one PID re-map table, and when a match is found, for indexing said at least one PID re-map table using said matching PID value, generating therefrom a re-map value, and replacing said matching PID value by said re-map value;

means for interleaving selected transport packets of said multiple transport streams;

means for forwarding said interleaved transport packets of said multiple transport streams to a single transport demultiplexor;

wherein said transport demultiplexor comprises means for demultiplexing said interleaved transport packets of said multiple transport streams; and

wherein said transport demultiplexor can handle x PID values, and n ≤ x.

50. (Original) The system of claim 40, wherein said multiple transport streams include navigation tables indicative of the PID values in use by the respective transport streams, and wherein said system further comprises means for monitoring said navigation tables and adjusting said n possible PID values of transport packets responsive to changes in said navigation tables.

51. (Currently Amended) A system for processing transport packets associated with multiple transport streams to be multiplexed into a single transport demultiplexor, said system comprising:

at least one PID re-map table having re-map values indexed by n possible PID values of transport packets associated with at least one transport stream of the multiple transport streams, wherein n is less than all possible PID values of transport packets within the multiple transport streams; [[and]]

a controller that compares PID values of transport packets associated with said at least one transport stream with said n possible PID values of said at least one PID re-map table, and when a match is found, indexes said at least one PID re-map table using said matching PID value, generates therefrom a re-map value, and replaces said matching PID value by said re-map value; and

wherein when a non-matching PID value is found, the controller performs at least one of: replacing said non-matching PID value with a null value, meaning that the associated transport packet is to be discarded; or performing clock recovery on the at least one transport stream and discarding the transport packet associated with said non-matching PID value.

52. (Currently Amended) A system for processing transport packets associated with multiple transport streams, said system comprising:

re-mapping logic that re-maps packet identifier (PID) values provided in transport packets associated with at least one transport stream of the multiple transport streams, said re-mapping logic comprising:

at least one PID re-map table having re-map values indexed by n possible PID values of transport packets associated with at least one transport stream of the multiple transport streams, wherein n is less than all possible PID values of transport packets within the multiple transport streams;

a controller that compares PID values of transport packets associated with said at least one transport stream with said n possible PID values of said at least one PID re-map table, and when a match is found, indexes said at least one PID re-map table using said matching PID value, generates therefrom a re-map value, and replaces said matching PID value by said re-map value;

wherein when a non-matching PID value is found, the controller performs at least one of: replacing said non-matching PID value with a null value, meaning that the associated transport packet is to be discarded; or performing clock recovery on the at least one transport stream and discarding the transport packet associated with said non-matching PID value;

a multiplexor for interleaving selected transport packets of said multiple transport streams; and

a transport demultiplexor coupled to said multiplexor for receiving said interleaved transport packets of said multiple transport streams for demultiplexing said interleaved transport packets.

53. (Currently Amended) A least one program storage device readable by a machine, tangibly embodying at least one program of instructions executable by the machine to perform a method for re-mapping packet identifier (PID) values provided in transport packets associated with multiple transport streams to be multiplexed onto a single shared transport channel, said method comprising:

providing at least one PID re-map table having

re-map values indexed by n possible PID values of transport packets associated with at least one transport stream of the multiple transport streams, wherein n is less than all possible PID values of transport packets within said multiple transport streams; [[and]]

comparing PID values of transport packets associated with said at least one transport stream with said n possible PID values of said at least one PID re-map table, and when a match is found, indexing said at least one PID re-map table using said matching PID value, generating therefrom a re-map value, and replacing said matching PID value by said re-map value; and

wherein when a non-matching PID value is found, performing at least one of: replacing said non-matching PID value with a null value, meaning that the associated transport packet is to be discarded; or performing clock recovery on the at least one transport stream and discarding the transport packet associated with said non-matching PID value.

54. (Canceled).

55. (Original) The at least one program storage device of claim 53, wherein said single shared transport channel couples to a transport demultiplexor, and wherein said transport demultiplexor can handle x PID values, and $n \leq x$.

56. (Original) The at least one program storage device of claim 55, wherein said n possible PID values equals 32 possible PID values.

57. (Original) The at least one program storage device of claim 53, further comprising receiving said multiple transport streams from multiple network interfaces, each network interface being coupled to receive a separate network input.

58. (Original) The at least one program storage device of claim 57, further comprising interleaving said multiple transport streams on a packet basis for output onto said single shared transport channel.

59. (Original) The at least one program storage device of claim 58, further comprising buffering selected transport packets of said multiple transport streams prior to interleaving thereof to ensure each packet is complete before interleaving.

60. (Original) The at least one program storage device of claim 53, wherein said multiple transport streams comprise two transport streams, and wherein said method comprises providing a separate PID re-map table for each of said two transport streams, and comparing PID values of transport packets associated with each of said two transport streams with entries of said respective PID re-map tables.

61. (Original) The at least one program storage device of claim 60, further comprising receiving said two transport streams for re-mapping, wherein each transport stream contains a real time clock reference.

62. (Original) The at least one program storage device of claim 53, wherein said multiple transport streams include navigation tables indicative of the PID values in use by the respective transport streams, and wherein said method further comprises monitoring said navigation tables and adjusting said n possible PID values of transport packets responsive to changes in said navigation tables.

63. (Original) The at least one program storage device of claim 53, further comprising receiving said multiple transport streams and synchronizing each stream to identify packet boundaries.

64. (Canceled).

65. (Currently Amended) The at least one program storage device of claim [[64]] 53, wherein said receiving comprises receiving at least one transport stream of the multiple transport streams through a network interface, said at least one transport stream comprising a live network input.

66. (Original) The at least one program storage device of claim 65, wherein at least one transport stream of said multiple transport streams comprises a transport stream retrieved from a storage device associated with a transport demultiplexor coupled to receive said interleaved transport packets.

67. (Currently Amended) At least one program storage device readable by a machine tangibly embodying at least one program of instructions executable by the machine to perform a method of processing transport packets associated with multiple transport streams, said method comprising:

re-mapping packet identifier (PID) values provided in transport packets associated with at least one transport stream of the multiple transport streams, said re-mapping comprising:

providing at least one PID re-map table having re-map values indexed by n possible PID values of transport packets associated with at least one transport stream of the multiple transport streams, wherein n is less than all possible PID values of transport packets within said multiple transport streams;

comparing PID values of transport packets associated with said at least one transport stream with said n possible PID values of said at least one PID re-map table, and when a match is found, indexing said at least one PID re-map table using said matching PID value, generating therefrom a re-map value, and replacing said matching PID value by said re-map value[[.]];

wherein when a non-matching PID value is found, performing at least one of: replacing said non-matching PID value with a null value, meaning that the associated transport packet is to be discarded; or performing clock recovery on the at least one transport stream and discarding the transport packet associated with said non-matching PID value;

interleaving selected transport packets of said multiple transport streams;

forwarding said interleaved transport packets of said multiple transport streams to a single transport demultiplexor; and

demultiplexing said interleaved transport packets of said multiple transport streams employing said single transport demultiplexor.

68. (Original) The at least one program storage device of claim 67, wherein said interleaving comprises interleaving said multiple transport streams on a packet basis for output to said single transport demultiplexor.

69. (Original) The at least one program storage device of claim 68, further comprising buffering said selected transport packets prior to interleaving thereof to ensure each packet is complete before interleaving.

70. (Original) The at least one program storage device of claim 67, further comprising receiving said multiple transport streams and synchronizing each stream to identify packet boundaries.

71. (Original) The at least one program storage device of claim 70, wherein said receiving comprises receiving said multiple transport streams for multiple network interfaces, each network interface being coupled to receive a separate live network input.

72. (Original) The at least one program storage device of claim 70, wherein said receiving comprises receiving at least one transport stream of multiple transport streams through a network interface, said at least one transport stream comprising a live network input.

73. (Original) The at least one program storage device of claim 72, wherein at least one transport stream of said multiple transport streams comprises a transport stream retrieved from a storage device associated with said single transport demultiplexor.

74. (Original) The at least one program storage device of claim 67, wherein said method is implemented within a set-top-box system.

75. (Canceled).

76. (Original) The at least one program storage device of claim 67, wherein said transport demultiplexor can handle x PID values, and $n \leq x$.

77. (Original) The at least one program storage device of claim 67, wherein said multiple transport streams include navigation tables indicative of the PID values in use by the respective transport streams, and wherein said method further comprises monitoring said navigation tables and adjusting said n possible PID values of transport packets responsive to changes in said navigation tables.

78. (Canceled).

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